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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/653,827	09/01/2000	Glenn D. Rasmussen	240703-1110	6068
23506	7590	03/22/2006	EXAMINER	
GARDNER GROFF SANTOS & GREENWALD, P.C.			TO, BAOQUOC N	
2018 POWERS FERRY ROAD			ART UNIT	
SUITE 800			PAPER NUMBER	
ATLANTA, GA 30339			2162	
DATE MAILED: 03/22/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/653,827	RASMUSSEN, GLENN D.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Baoquoc N. To	2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 9-21, 24-33 and 36-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-21, 24-33 and 36-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/10/2005</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. Claims 1-8, 35, 43-44 are canceled in the amendment filed on 12/27/2005.

Claims 9-34 and 36-42 are pending in this application.

***Response to Arguments***

2. Applicant's arguments filed 12/29/2005 have been fully considered but they are not persuasive.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**MPEP 2106 IV. B.2. (b)**

A claim that requires one or more acts to be performed defines a process.

However, not all processes are statutory under 35 U.S.C. 101. Schrader, 22 F.3d at 296, 30 USPQ2d at 1460. To be statutory, a claimed computer-related process must either: (A) result in a physical transformation outside the computer for which a practical application in the technological arts is either disclosed in the specification or would have been known to a skilled artisan, or (B) be limited to a practical application within the technological arts.

3. Regarding claims 9-34 and 36-42 in view of the above cited MPEP section, are not statutory because they merely recite a number of computing steps without producing any tangible result and/or being limited to a practical application within the technological arts. All the recited steps of the methods or software steps can be done

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by a person as a mental step or using pencil and paper. The use of a computer has not been indicated.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 9-21, 24-33 and 36-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mullins et al. (US. Patent No. 5,857,197) in view of Papazoglou et al. (A Semantic Meta-Modeling Approach to Schema Transformation, 1995) in view of Fink (US. Patent No. 6,490,590):

Regarding on claims 9 and 36, Mullins teaches a metadata model transformer for transforming a metadata model that represents one or more data sources having physical data the transformation comprising:

one or more data access to business model transformations for constructing business model objects in the business layer based on the data access model objects in the data access layer by adding business rules for representing business concepts (col. 4, lines 33-48); and

one or more business to package model transformations for constructing

package model objects in the package layer based on the business model objects in the business layer, whereby the package model objects provide a representation of the business concepts (col. 4, lines 33-38).

Although, Mullins discloses metadata model 201 (col. 4, lines 24-37); however, Mullins does not explicitly teach one or more data access model transformations for refining description of the physical data in the data source expressed by data access model objects in a metadata model having a data access layer containing the data access model objects having a lower degree of abstraction, a business layer containing business model objects having a higher degree of abstraction compared to the data access model objects, and a package containing package model objects; one or more business model transformations for refining the business rules expressed by the business model objects. On the other hand, Papazoglou discloses "one or more data access model transformations for refining description of the physical data in the data source expressed by data access model objects in a metadata model having a data access layer containing the data access model objects having a lower degree of abstraction, a business layer containing business model objects having a higher degree of abstraction compared to the data access model objects, and a package containing package model objects" (page 113, left column, lines 31-26). This transformed layers would allow the aid to support all different database systems to develop or access. Furthermore, Mullins does not explicitly teach one or more business model transformation for refining the business rules expressed by the business model object. However, Fink teaches, "SME refines the business rule metadata to reflect the client's

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business" (col. 8, lines 20-22). This teaches the refines business rule metadata.

Therefore it would have been obvious to one ordinal skill in the art at the time of the invention was made to modify both Papaoglou and Mullins to include refining business rules of Fink because refining rule metadata would allow the creation of the object model in order to aid the business application.

Regarding on claims 10 and 37, Mullins teaches the data access model transformations refines the description by adding new data access model objects to data access model objects which are constructed via import from the data sources or one or more metadata sources (col. 4, lines 33-48).

Regarding on claims 11 and 38, Fink teaches the business model transformations refine the business rules by changing the business model objects (col. 8, lines 20-22).

Regarding on claims 12 and 39, Mullins teaches the business model objects include business model objects, which are constructed via import from one or more metadata sources (col. 4, lines 8-20).

Regarding on claims 13 and 40, Mullins teaches metadata model transformer further comprising:

one or more package model transformations for constructing a new package model object based on the package model objects in the model (col. 4, lines 33-48).

Regarding on claims 14 and 41, Mullins teaches the package model objects include package model objects, which are constructed via import from one or more metadata sources (col. 4, lines 33-48).

Regarding on claims 15 and 42, Mullins teaches metadata model transformer further comprising: a name mutation transformation for changing names of objects in the model based on user defined rules (col. 4, lines 33-48).

Regarding on claim 16, Mullins teaches the data access model transformations include a transformation which creates a new data access model object based on the data access model objects contained in the data access layer (col. 4, lines 33-48).

Regarding on claim 17, Mullins teaches the data sources contain tables having columns and indexes, the data access model objects include data access tables, data access columns and data access indexes which respectively describe information about the tables, columns and indexes in the data sources; and the data access model transformations include a data access join constructing transformation for constructing a data access join between data access tables based on the data' access indexes (col. 4, lines 8-20).

Regarding on claim 18, Mullins teaches the data sources contain tables having columns and indexes', the data access model objects include data access tables, data access columns and data access indexes which respectively describe information about the tables, columns and indexes in the data sources', and the data access model transformations include a data access key constructing transformation for creating a data access key for a data access table based on the data access indexes (col. 4, lines 8-20).

Regarding on claim 19, Mullins teaches the data sources contain at least one of tables having columns and indexes, views having columns or files having columns or

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fields:

the data access model objects include at least one of data access tables, data access views, data access files, data access columns and data access indexes which respectively describe information about the tables, columns of the tables, indexes of the tables, the views, the columns of the views, the files, and the columns or fields of the files in the data sources' and the data access model transformations include a table extract constructing transformation for constructing a table extract based on the data access tables, the data access views and the data access files (col. 4, lines 8-20).

Regarding on claim 20, Mullins teaches the data access model objects include one or more logical cube, each of which defines a multidimensional space represented in a number of physical storage formats (14, lines 32-48); and

the data access model transformations include a data access cube constructing transformation for constructing data access cubes to instantiate the multidimensional space defined by each logical cube (col. 4, lines 32-48) .

Regarding on claim 21, Mullins teaches the data access to business model transformations include a basic business model constructing transformation which obtains information about a data access model object in the data access layer, and create a business model object corresponding to the data access model object (col. 4, lines 32-48).

Regarding on claim 24, Mullins teaches the business model objects include one or more redundant joins that express the transitivity of two or more other join relationships in the business layer (col. 4, lines 32-48): and



the business model transformations include a redundant join relationship eliminating transformation for locating the redundant joins, and eliminating the redundant joins from the business layer (col. 4, lines 32-48).

Regarding on claim 25, Mullins teaches the business model transformations include a subclass relationship introducing transformation for introducing new entity with a subclass relationship into the business layer (14, lines 32-48).

Regarding on claim 26, Mullins teaches the business model objects include an entity acting as a lookup table with respect to the other entity, and a business join between the entities, the business join is an associate type; and the business model transformations include an entity referencing transformation for locating the entity acting as a lookup table, and changing the business join which is an association type to a business join which is a reference type (col. 4, lines 32-48).

Regarding on claim 27, Mullins teaches the business model transformations include an attribute usage determining transformation for determines the usage of an attribute based on how it is used by other business model objects (col. 4, lines 50-64).

Regarding on claim 28, Mullins teaches the business model transformations include a date usage identifying transformation for examining attributes to determine where dates are used in the attributes (col. 4, lines 32-48).

Regarding on claim 29, Mullins teaches the business to package model transformations include a basic package model constructing transformation for constructing a package layer by forming a package with package model objects which corresponds to a subset of the business model objects (col. 4, lines 32-48).

Regarding on claim 30, Mullins teaches the package model transformations include a special package construction transformation for constructing a specific package which is usable by a specific client application from a generic package (col. 4, lines 32-48).

Regarding on claim 31, Mullins teaches one or more multidimensional model transformations for a multidimensional model (col. 4, lines 32-48).

Regarding on claim 32, Mullins teaches the multidimensional model transformations include a measure identifying and measure dimension constructing transformation for analyzing the structure of each data source to identify entities that contain measure candidates and identifying a reasonable set of measures (col. 4, lines 32-48).

Regarding on claim 33, Mullins teaches the multidimensional model transformations include a category dimension and level constructing transformation for analyzing each data source, and constructing dimensions and levels for the source model (col. 4, lines 32-48).

Regarding on claim 34, Mullins teaches the multidimensional model transformations include a logical cube constructing transformation for constructing a set of logical cubes based on the dimensions in a corresponding data source (col. 4, lines 32-48).

6. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mullins et al. (US. Patent No. 5,847,197) in view of Fink (US. Patent No. 6,490,590) and further in view of Henninger et al. (US. Patent NO. 5,499,371).

Regarding on claim 22, Both Mullins and Fink do not explicitly teach the business model objects include entities that exist as an implementation artifact of a many to many relationship, and many to many business joins associated with the entities', and the business model transformations include a many to many join relationship fixing transformation for locating the entities, and replacing the associated many to many business joins with a single business join. However, Henninger, teaches, "for each many-to-many relationship in the object model, a separate join table is added to the data base schema" (col. 8, lines 51-53). Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Mullins by including Henniger in order to provide for using an object model of an object-oriented application to automatically map information between an object-oriented application and a structured database, such as relational database.

Regarding on claim 23, Henninger teaches the business model objects include entities that are related via a 1 :1 join relationship (col. 8, lines 48-51)-, and the business model transformations include an entity coalescing transformation for locating the entities that are related via a 1:1 join relationship, and coalescing the located entities into a single entity (col. 8, lines 48-51).

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Baoquoc N. To whose telephone number is at 571-272-4041 or via e-mail BaoquocN.To@uspto.gov. The examiner can normally be reached on Monday-Friday: 8:00 AM – 4:30 PM, EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached at 571-272-4107.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231.

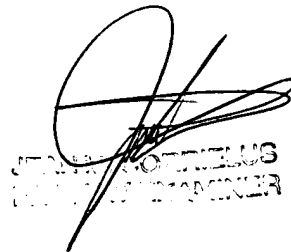
The fax numbers for the organization where this application or proceeding is assigned are as follow:

(571) -273-8300

[Official Communication]

BQ To

March 15th, 2006



JOHN P. BREENE  
EXAMINER